

1 1. A data structure for storing information for a complex order processing system
2 in a database, the data structure including:

3 an asset table representing products and services currently installed at a

4 customer's premises, wherein an asset comprises at least one of: a

5 product, and a service;

6 a quote table representing offers to change the products and services provided to a

7 customer; and

8 an order table representing instructions to change the products and services

9 provided to a customer.

1 2. The data structure of Claim 1, wherein the asset table comprises at least one of:

2 an asset price adjusted to take into account discounts;

3 a base price of the asset;

4 a unique identifier of the asset;

5 an identifier of an account that is billed for the asset;

6 an identifier of an account at which the asset is provided;

7 an identifier of an agreement under which the asset is provided;

8 a status of the asset;

9 a date that service started;

10 a date that service ended;

11 a price description;

12 an identifier of a metering asset with which the asset is associated; and

13 an absolute quantity of an item given its position in the asset hierarchy.

1 3. The data structure of Claim 2, wherein the action code is set to one of:

2 a value to indicate that the asset is active;

3 a value to indicate that the asset has been deleted; and

4 a value to indicate that the asset has been suspended.

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1 4. The data structure of Claim 1, wherein the quote table comprises at least one
2 of:
3 an identifier of an agreement under which the quote was made;
4 an identifier of a metering asset with which the asset is associated;
5 an absolute quantity of an item given its position in the asset hierarchy;
6 an identifier of an account that is billed for the asset;
7 an identifier of an account at which the asset is provided;
8 an action code to indicate whether there is a change to the specified service item;
9 a telephone number corresponding to these items; and
10 a unique identifier of the asset.
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1 5. The data structure of Claim 4, wherein the action required during the Delta
2 Process is set to one of:
3 a value to indicate that a quote item was added;
4 a value to indicate that the quote item was deleted; and
5 a value to indicate that the quote item was updated..

1 6. The data structure of Claim 1, wherein the order table includes at least one of:
2 an identifier of an agreement under which the order was made;
3 an identifier of a metering asset with which the asset is associated;
4 an absolute quantity of an item given its position in the asset hierarchy;
5 an identifier of an account that is billed for the asset;
6 an identifier of an account at which the asset is provided;
7 an action code to indicate whether there is a change to the specified service item;
8 a unique identifier of the asset;
9 a telephone number corresponding to these items;
10 a date and time at which the order was completed; and
11 a status field for items in the order.

1 7. The data structure of Claim 6, wherein the action code is set to one of:
2 a value to indicate that an order item has been added;
3 a value to indicate that the order item has been deleted; and
4 a value to indicate that the order item has been updated.

1 8. The data structure of Claim 6, wherein the status field is set to one of:
2 a value to indicate that an order item is deleted;
3 a value to indicate that the order item is active; and
4 a value to indicate that the order item is suspended.

1 9. The data structure of Claim 1, wherein the asset represents a complex product
2 with a hierarchy sub-products, and at least one sub-product is a complex product.

1 10. The data structure of Claim 1, further comprising:
2 a product integration table comprising at least one of:
3 a track as asset field to indicate whether a product is to be converted to an asset;
4 a metering point field to indicate whether a product requires a metering point;
5 a price type field; and
6 a transfer field to indicate whether the asset can be moved when a customer
7 changes address.

1 11. The data structure of Claim 10, wherein the price type is one of:
2 a value to indicate that price is a one-time charge;
3 a value to indicate that the price is recurring; and
4 a value to indicate that the price is based on usage.

1 12. The data structure of Claim 1, wherein a quote is converted to an order when
2 the customer accepts the quote.

1 13. The data structure of Claim 12, wherein multiple service quotes are
2 associated with a customer.

1 14. The data structure of Claim 12, wherein multiple service quotes are
2 associated with a service item.

1 15. The data structure of Claim 12, wherein a the status of the service quote
2 changes to "Order Placed" once a quote is successfully converted to an order.

1 16. The data structure of Claim 12, wherein the order type of a new order is
2 changed to indicate a service order and the status of the new order is changed to indicate
3 the order is new.

1 17. The data structure of Claim 16, wherein the status of each order line item is
2 changed to indicate a new order when the action field is non-null and to indicate a null
3 order when the action field is null.

1 18. The data structure of Claim 1, further comprising:
2 a quote header table comprising at least one of:
3 an identifier of an agreement under which the quote was made;
4 an identifier of an account to be billed for the asset; and
5 an identifier of an account at which the asset will be provided.
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1 19. The data structure of Claim 1, further comprising:
2 an order header table comprising at least one of:
3 an identifier of an agreement under which the order was made;
4 an identifier of an account that will be billed for the asset; and
5 an identifier of an account at which the asset will be provided.

1 20. The data structure of Claim 1, further comprising:
2 a quote header table comprising billing and service account information; and
3 an order header table comprising billing and service account information,

4 wherein at least a portion of the information in the quote header table is
5 transferred to the order header table when the quote is converted to an
6 order.
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1 21. The data structure of Claim 1, wherein at least a portion of the information in
2 the asset table is transferred to the order table when a new quote is created.

1 22. The data structure of Claim 1, wherein at least a portion of the information in
2 the quote table is transferred to the order table when a quote is converted to an order.

1 23. The data structure of Claim 1, wherein at least a portion of the information in
2 the order table is transferred to the asset table when an order is provisioned.

1 24. The data structure of Claim 1, further comprising:
2 a quote item extended attributes table comprising quote attribute information;
3 an order item extended attributes table comprising order attribute information;
4 an asset extended attributes table comprising asset attribute information,
5 wherein at least a portion of the information in the quote item extended attributes
6 table is transferred to the order item extended attributes table when the quote is converted
7 to an order.

1 25. The data structure of Claim 24, wherein at least a portion of the information
2 in the quote item extended attributes table is transferred to the order item extended
3 attributes table when a quote is converted to an order.

1 26. The data structure of Claim 25, wherein at least a portion of the information
2 in the order item extended attributes table is transferred to the asset extended attributes
3 table when an order is provisioned.

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2 27. A data structure for an order processing system comprising:

3 a complex object comprising a service profile, wherein the service profile
4 represents an asset associated with an account;
5 a data manager operable to
6 receive at least a portion of the service profile from an external server via
7 an information network; and
8 generate a business object based on the portion of the service profile;
9 a transformation engine operable to generate at least a portion of the complex
10 object based on the business object;
11 wherein the complex object is stored in an asset table.

1 28. The data structure of Claim 27, wherein the asset table comprises at least one
2 of:

3 an asset price adjusted to take into account discounts;
4 a base price of the asset;
5 a unique identifier of the asset;
6 an identifier of an account that is billed for the asset;
7 an identifier of an account at which the asset is provided;
8 an identifier of an agreement under which the asset is provided;
9 a status of the asset;
10 a date that service started;
11 a date that service ended;
12 a price description;
13 an identifier of a metering asset with which the asset is associated; and
14 an absolute quantity of an item given its position in the asset hierarchy.

1 29. The data structure of Claim 28, wherein the action code is set to one of:
2 a value to indicate that the asset is active;
3 a value to indicate that the asset has been deleted; and
4 a value to indicate that the asset has been suspended. .

1 30. The data structure of Claim 27, wherein at least a portion of the information
2 in the asset table is transferred to an order table when a new quote is created.

1 31. The data structure of Claim 27, wherein at least a portion of the information
2 in an order table is transferred to the asset table when an order is provisioned.

1 32. The data structure of Claim 27, further comprising:
2 a quote table representing offers to change the products and services provided to a
3 customer, wherein the quote table comprises at least one of:
4 an identifier of an agreement under which the quote was made;
5 an identifier of a metering asset with which this asset is associated;
6 an absolute quantity of an item given its position in the asset hierarchy;
7 an identifier of an account that is billed for the asset;
8 an identifier of an account at which the asset is provided;
9 an action code to indicate whether there is a change to the specified service item;
10 a telephone number corresponding to these items; and
11 a unique identifier of the asset.

1 33. The data structure of Claim 32, wherein the action code required during the
2 Delta Process is set to one of:
3 a value to indicate that a quote item was added;
4 a value to indicate that the quote item was deleted; and
5 a value to indicate that the quote item was updated.

1 34. The data structure of Claim 32, wherein a quote is converted to an order when
2 the customer accepts the quote.

1 35. The data structure of Claim 32, wherein multiple service quotes are
2 associated with a customer.

1 36. The data structure of Claim 32, wherein multiple service quotes are
2 associated with a service item.

1 37. The data structure of Claim 32, wherein a workflow changes the service
2 quote status to "Order Placed" once a quote is successfully converted to an order.

1 38. The data structure of Claim 27, further comprising:
2 an order table representing instructions to change the products and services
3 provided to a customer, wherein the order table comprises at least one of:
4 an identifier of an agreement under which the order was made;
5 an identifier of a metering asset with which the asset is associated;
6 an absolute quantity of an item given its position in the asset hierarchy;
7 an identifier of an account that is billed for the asset;
8 an identifier of an account at which the asset is provided;
9 an action code to indicate whether there is a change to the specified service item;
10 a unique identifier of the asset;
11 a telephone number corresponding to these items;
12 a date and time at which the order was completed; and
13 a status field for items in the order.

1 39. The data structure of Claim 38, wherein the action code is set to one of:
2 a value to indicate that an order item has been added;
3 a value to indicate that the order item has been deleted; and
4 a value to indicate that the order item has been updated.

1 40. The data structure of Claim 38, wherein the status field is set to one of:
2 a value to indicate that an order item is deleted;
3 a value to indicate that the order item is Active; and
4 a value to indicate that the order item is Suspended.

1 41. The data structure of Claim 27, wherein the asset represents a product with a
2 hierarchy of sub-products, and at least one sub-product is a complex product.

1 42. The data structure of Claim 27, further comprising:

2 a product integration table comprising at least one of:
3 a track as asset field to indicate whether a product should be converted to an asset
4 by an order-to-asset workflow process;
5 a metering point field to indicate whether a product requires a metering point;
6 a price type field; and
7 a transfer field to indicate whether the asset can be moved when a customer
8 changes address.

1 43. The data structure of Claim 42, wherein the price type is one of:
2 a value to indicate that price is a one-time charge;
3 a value to indicate that the price is recurring; and
4 a value to indicate that the price is based on usage.

1 44. The data structure of Claim 42, wherein the order type is set to indicate a
2 service order and the status of the new order is changed to indicate the order is new.

1 45. The data structure of Claim 27, wherein the status of each order line item is
2 set to indicate that the order item is new when the action field is non-null and the status of
3 each order line item is set to indicate that the order item is null when the action field is
4 null.

1 46. The data structure of Claim 32, further comprising:
2 a quote header table comprising at least one of:
3 an identifier of an agreement under which the quote was made;
4 an identifier of an account to be billed for the asset; and
5 an identifier of an account at which the asset will be provided.

1 47. The data structure of Claim 38, further comprising:
2 an order header table comprising at least one of:
3 an identifier of an agreement under which the order was made;
4 an identifier of an account that will be billed for the asset; and
5 an identifier of an account at which the asset will be provided.

1 48. The data structure of Claim 27, further comprising:
2 a quote header table comprising billing and service account information; and
3 an order header table comprising billing and service account information,
4 wherein at least a portion of the information in the quote header table is
5 transferred to the order header table when the quote is converted to an
6 order.

1 49. The data structure of Claim 32, wherein at least a portion of the information
2 in the quote table is transferred to an order table when a quote is converted to an order.